

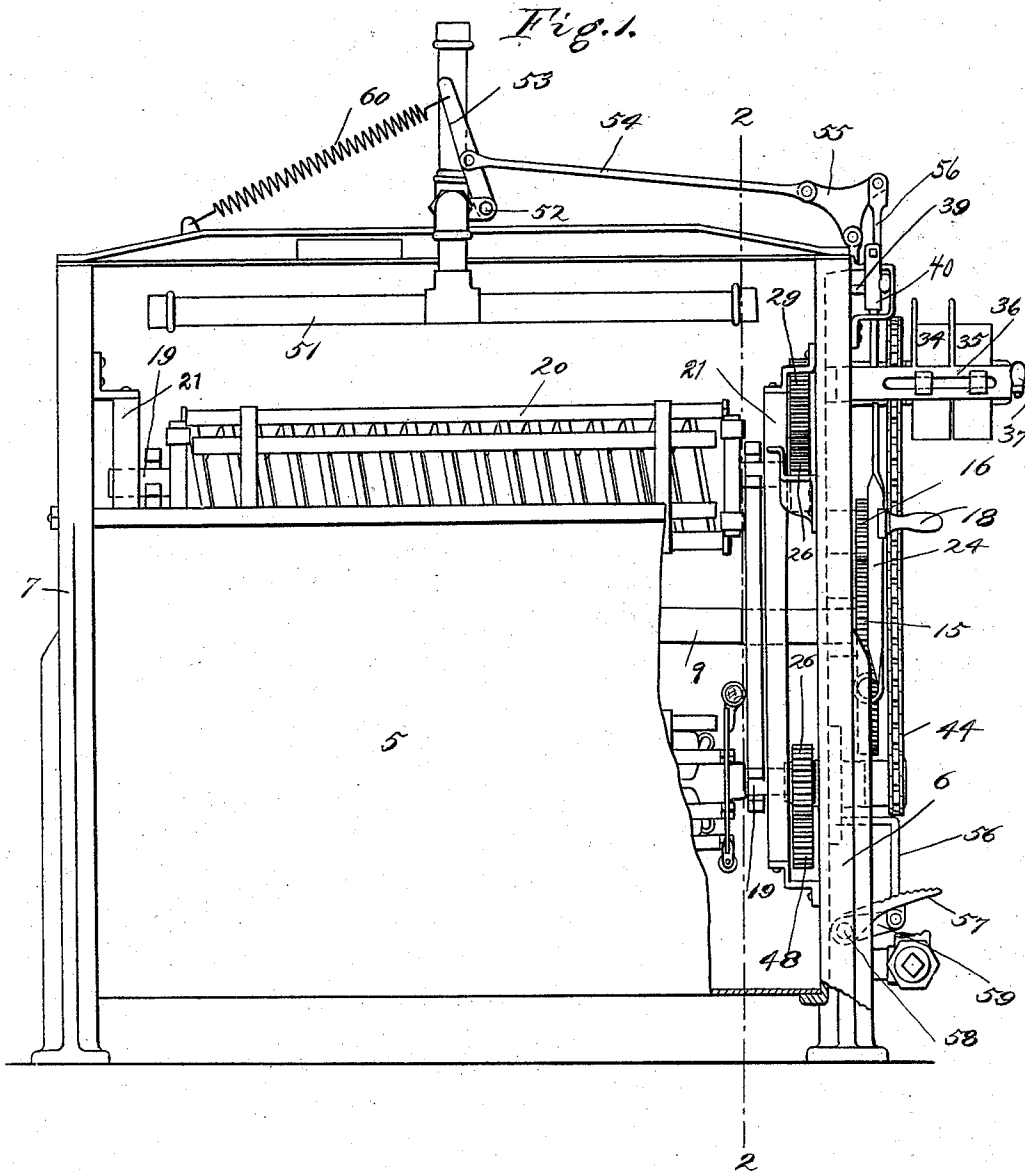
(No Model.)

3 Sheets—Sheet 1.

G. S. BLAKESLEE.
DISH CLEANER.

No. 542,460.

Patented July 9, 1895.



Witnesses:

Julia M. Bristol.

Nellie McKibben.

Inventor

George S. Blakeslee

By Roderic Stans, Patrick Jackson
his Attys

(No Model.)

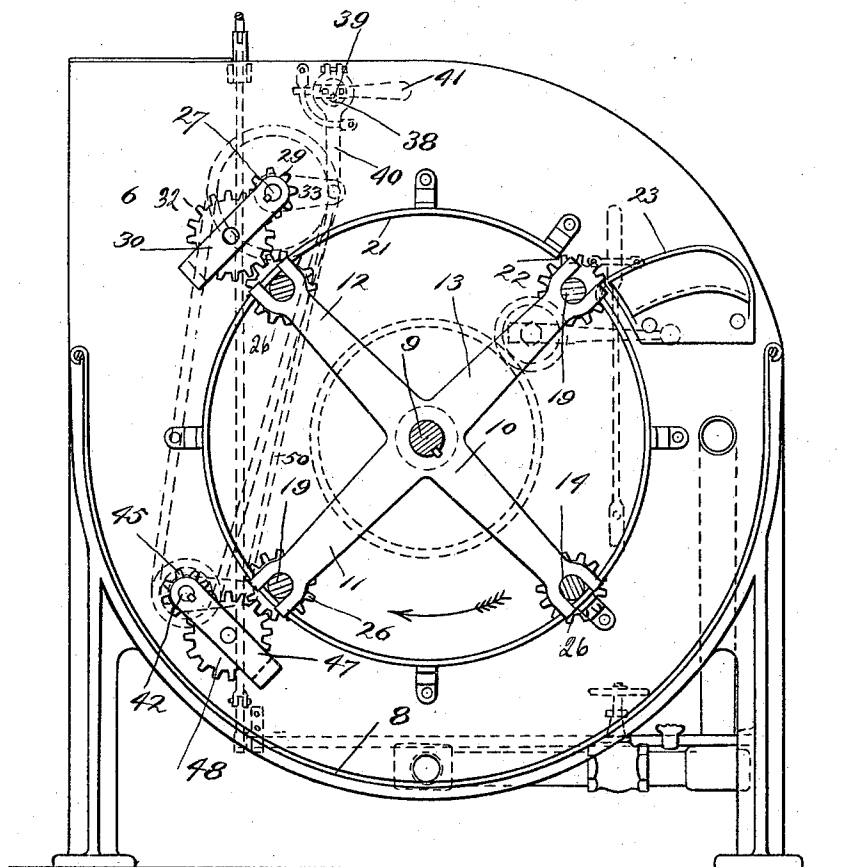
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Fig. 2.



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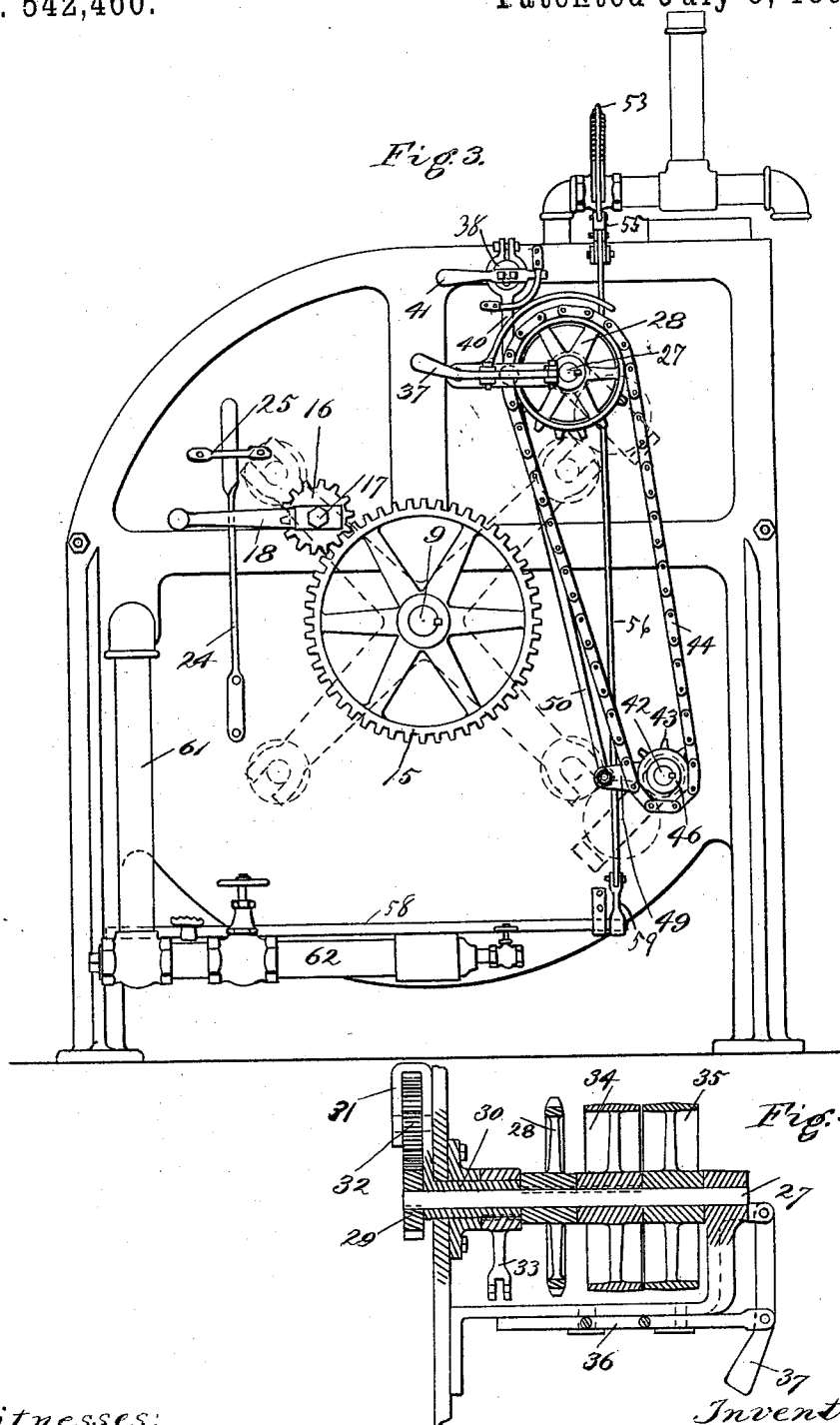
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UNITED STATES PATENT OFFICE.

GEORGE S. BLAKESLEE, OF CHICAGO, ILLINOIS.

DISH-CLEANER.

SPECIFICATION forming part of Letters Patent No. 542,460, dated July 9, 1895.

Application filed November 27, 1893. Serial No. 492,114. (No model.)

To all whom it may concern:

Be it known that I, GEORGE S. BLAKESLEE, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Dish-Washing Machines, of which the following is a specification, reference being had to the accompanying drawings, in which—

10 Figure 1 is a front elevation, part of the front of the machine being broken away, showing the internal mechanism. Fig. 2 is a vertical cross-section on line 2 2 of Fig. 1. Fig. 3 is an end elevation, looking to the left in Fig. 1. Fig. 4 is a horizontal section showing part of the driving mechanism.

My invention relates to machines for washing dishes, and has for its objects to provide improved mechanism for rotating the dish-
20 holding baskets while in the water in the tank, to provide improved means for rinsing the dishes, to provide improved means for drying the dishes, and to improve the construction of dish-washing machines in various
25 other particulars, which will be hereinafter more fully set forth. I accomplish the objects of my invention as hereinafter specified, and as illustrated in the drawings.

That which I regard as my invention will
30 be set forth in the claims.

Referring to the drawings, 5 indicates the body of the machine, which consists of end pieces 6 7 and a semicircular bottom piece 8, the whole forming a tank which contains the
35 water through which the dishes are moved in washing.

9 indicates a shaft, which extends centrally through the machine, upon each end of which shaft are carried arms 10 11 12 13, which constitutes a rotary basket carrier. Said arms
40 are radially arranged and are spaced equal distances apart, as best shown in Fig. 2. At the end of each arm is a recess 14, as shown in Fig. 2.

15 indicates a gear-wheel, which is mounted upon one end of the shaft 9, which projects through the end piece of the machine, as shown in Figs. 1 and 3. The gear-wheel 15 is keyed to the shaft 9.

50 16 indicates a pinion, which is mounted upon a stud 17, supported in the end of the ma-

chine in such position that the pinion 16 meshes with the gear 15, as shown in Fig. 3.

18 indicates a crank secured to the pinion 16. By operating the crank 18 the pinion 16
55 and gear 15 may be rotated, thereby rotating the shaft 9 and the arms 10 11 12 13 carried by it.

The recesses 14 of the arms 10 11 12 13 are adapted to receive the gudgeons 19 of dish-
60 holding baskets 20, such recesses forming bearings for such gudgeons.

Secured to each end piece 6 7 on the inside is a hoop 21, the diameter of which is practically equal to the radius of the circle de-
65 scribed by the arms 10 11 12 13, by which arrangement the gudgeons 19 will be held in place in the recesses 14 by such hoops. At their forward upper portions one or both of
70 the hoops 21 are provided with openings 22 to permit of the insertion and removal of the gudgeons of the baskets 20. Forward of and upon a level with the openings 22 are provided supports 23, which are secured to the
75 end pieces 6 7 and serve to support the dish-washing baskets and guide them into the recesses 14, as shown in Fig. 2.

24 indicates a spring-bar, which is secured to the end piece 6 and is adapted to enter a
80 notch in the crank 18 when such crank moves into the proper position, the arrangement being such that the spring-bar 24 will enter such notch and thereby lock the crank against further rotation when the different baskets
85 arrive at certain positions in their revolution about the shaft 9.

25 indicates a strap, which serves to prevent the bar 24 from becoming displaced.

In order that the dish-washing baskets may be axially rotated, I provide each of them
90 with a pinion 26, which is mounted upon one of the gudgeons 19 of each basket, as shown in Fig. 2.

27 indicates a shaft, which is supported by the end piece 6 and projects therefrom in a
95 horizontal direction.

28 indicates a sprocket-wheel, which is mounted upon and keyed to said shaft.

29 indicates a pinion, which is also mounted upon and keyed to the shaft 27, as best shown
100 in Fig. 4.

30 indicates a sleeve, which is loosely

mounted upon the shaft 27 and carries a bracket 31, as best shown in Fig. 4.

32 indicates a gear, which is journaled in the bracket 31 and meshes with the pinion 29, as shown in Fig. 4.

33 indicates an arm, which is mounted upon and keyed to the sleeve 30.

34 indicates a pulley, which is mounted upon and keyed to the shaft 27.

35 indicates a loose pulley, mounted upon the shaft 27.

36 indicates a belt-shifting device of the usual form, having a handle 37, by means of which it is operated. By shifting the belt from the loose pulley 35 to the fixed pulley 34 the shaft 27 may be rotated by power, thereby rotating the pinion 29 and the gear 32 when said gear and pinion are in mesh. When the arm 33 is in a horizontal position, the arrangement is such that the gear 32 will be in position to intermesh with one of the pinions 26, should such pinion be opposite it. By rocking the sleeve 30 upon the shaft 27 the gear 32 may be thrown out of mesh with the pinion 26 and the rotation of the dish-washing baskets stopped.

The sleeve 30 is rocked to throw the gear 32 into and out of mesh with the pinions 26 by means of a disk 38, which is eccentrically mounted upon a pin 39, supported by the end piece 6. The disk 38 is connected to the arm 33 by a connecting-bar 40, as shown in Fig. 2. The disk 38 carries a hand-bar 41 for convenience in rotating it. When the disk 38 is rotated, the connecting-bar 40 will be moved vertically, thereby rocking the sleeve 30 and moving the gear 32 into or out of mesh with the pinions 26.

42 indicates a shaft, which is supported by the end piece 6 near the bottom of the machine and substantially under the shaft 27. The shaft 42 carries a sprocket-wheel 43, which is connected to the sprocket-wheel 28 by a link belt 44, as shown in Fig. 3. The shaft 42 also carries a pinion 45 and a sleeve 46, similar to the sleeve 30. The sleeve 46 carries a bracket 47, in which bracket is mounted a gear 48, which meshes with the pinion 43, as best shown in Fig. 2.

49 indicates an arm carried by the sleeve 46, which arm is connected to the arm 33 by a connecting-rod 50, as best shown in Figs. 2 and 3. By rocking the sleeve 46 the gear 48 may be moved into and out of mesh with any of the pinions 26 when they lie opposite it, its operation being substantially the same as the gear 32. By connecting the arms 33 and 49, as above described, the two sleeves will be rocked simultaneously whenever the eccentric disk 38 is rotated.

By the above-described construction by stopping the rotation of the shaft 9 at the proper point one of the dish-washing baskets can be rotated under water, while the one above it is rotated above water, for the purpose of rinsing the dishes, as will be herein-

after described. As best shown in Fig. 2, the devices for rotating the dish-washing basket under water are so located that one of the baskets may be rotated while a basket of washed dishes is being removed and replaced, so that no time need be lost. The same is true of the rotating devices for rotating the dish-basket under the sprinkler.

51 indicates a sprinkler-pipe, which is of about the length of the baskets 20 and is arranged at the upper rear portion of the machine in convenient position to sprinkle the dishes contained in the baskets as they are rotated by the gear 32. The sprinkler 51 may be of any approved construction and is provided with a quick-opening valve 52, operated by a lever 53, connecting-rod 54, three-armed lever 55, connecting-rod 56, and foot-lever 57, as shown in Fig. 1. The foot-lever 57 is mounted upon a shaft 58, which shaft also carries an arm 59, which is connected to the connecting-rod 56. By depressing the foot-lever 57 the shaft 58 may be rocked, thereby depressing the connecting-rod 56 and rocking the lever 55, causing the valve 52 to open and permitting the flow of water from the sprinkler.

60 indicates a spring which serves to close the valve 52.

I do not wish to be understood as confining myself to the employment of the three-armed lever, as any other lever suitable for the conditions required can be employed.

61 indicates a pipe by means of which water is supplied to the tank, and 62 indicates a pipe by means of which the water is drawn off from the tank, both of which pipes are provided with suitable valves.

A basket of dishes is supported between opposite arms, as 13, and the shaft 9 is then rotated in the direction indicated by the arrow in Fig. 2 until said basket has made a quarter of a revolution, when the next pair of arms 12 will have arrived in position to receive a basket. When the shaft 9 has made a half-revolution the first basket will have arrived opposite the gear 48, and by throwing said gear into mesh with the pinion carried by said basket it may be rotated, agitating the water in the tank and thoroughly washing the dishes. I arrange the dishes in inclined planes, whereby a greater frictional contact with the air is obtained when the dishes are rotated, the evaporation of the moisture is promoted, and the best results are secured. When the shaft 9 has made three-quarters of a revolution, the first basket will have arrived opposite the gear 32 and the second basket will be opposite the gear 48. Both baskets may now be rotated and the sprinkler-valve opened, thereby rinsing the dishes in the first basket. For the purpose of drying the dishes the rotation of the upper basket is continued after the sprinkler-valve is closed, and the centrifugal force, assisted by evaporation, will thereby cause practically all the moisture to

be thrown off, by which means the dishes will be thoroughly dried by the time they arrive in position to be removed from the machine. By using hot water for rinsing the drying may be secured more rapidly.

I do not wish to limit myself to details of construction, as many modifications can be made without departing from the spirit of my invention.

That which I claim as my invention, and desire to secure by Letters Patent, is—

1. In a dish-washing machine, the combination with a water tank, one or more dish-holding baskets, and a basket-carrier for carrying the baskets through the water in the water-tank, of devices for rotating the baskets upon their axes, and mechanism for throwing said devices into and out of operative connection with the baskets, substantially as described.

2. In a dish washing machine, the combination with a water tank, dish holding baskets, and a basket carrier for carrying the baskets through the water in the tank, of means whereby the baskets may be rotated upon their axes at intervals while they are submerged in the water in the tank, substantially as described.

3. In a dish-washing machine, the combination of a rotatable basket-carrier, dish-holding baskets rotatable on the basket-carrier, means for rotating the carrier, and basket-rotating devices movable into and out of gear with the shaft of each basket when it is carried to a certain point by the basket-carrier, substantially as described.

4. In a dish-washing machine, the combination with a water-tank, one or more dish-holding baskets, and a basket-carrier for moving the baskets through the water in the tank, of mechanism operating independently of the movement of the basket-carrier for rotating said basket or baskets upon their axes, when the basket-carrier is stationary, substantially as described.

5. In a dish-washing machine, the combination with a tank, of a rotatable basket-carrier, rotatable baskets carried by the carrier and moved thereby through the water in the tank, upper and lower devices for rotating said baskets upon their axes, and sprinkling devices, substantially as described.

6. In a dish-washing machine, the combination with a water-tank, rotatable dish-holding baskets, and a basket-carrier for carrying the baskets through the water in the tank, of means for rotating one or more of said bas-

kets upon their axes when said carrier is stationary, and a sprinkler arranged in position to sprinkle the dishes in one of said baskets while it is rotating, substantially as described.

7. In a dish-washing machine, the combination with a tank, and dish-holding baskets, of a rotary basket carrier, means for holding the baskets in position upon said carrier, pinions 26 carried by said baskets, a shaft 27, bracket 31 mounted thereupon, a pinion 32 carried by said bracket and adapted to mesh with said pinions 26, means for rotating said shaft, a pinion mounted upon said shaft and meshing with said pinion 32, and means for throwing said pinion 32 into and out of mesh with said pinions 26, substantially as described.

8. In a dish-washing machine, the combination with a tank, and dish-holding baskets, of a rotary basket carrier, means for holding the baskets in position upon said carrier, pinions 26 carried by said baskets, a shaft 27, bracket 31 mounted thereupon, a pinion 32 carried by said bracket and adapted to mesh with said pinions 26, means for rotating said shaft, a pinion mounted upon said shaft and meshing with said pinion 32, means for throwing said pinion 32 into and out of mesh with said pinions 26, a shaft 42, pinion 45 mounted upon said shaft and rotating therewith, bracket 47 carried by said shaft, pinion 48 mounted in said bracket and adapted to mesh with said pinions 26, means for rotating said shaft 42, and means for moving said pinion 48 into and out of mesh with said pinions 26, substantially as described.

9. In a dish-washing machine, the combination with a tank, and dish-holding baskets, of a rotary basket carrier, means for holding the baskets in position upon said carrier, pinions 26 carried by said baskets, a shaft 27, bracket 31 mounted thereupon, a pinion 32 carried by said bracket and adapted to mesh with said pinions 26, means for rotating said shaft, a pinion mounted upon said shaft and meshing with said pinion 32, a shaft 42, pinion 45 mounted upon said shaft and rotating therewith, bracket 47 carried by said shaft, pinion 48 mounted in said bracket and adapted to mesh with said pinions 26, means for rotating said shaft 42, and means for rocking said brackets 31 and 47 simultaneously, substantially as described.

GEORGE S. BLAKESLEE.

Witnesses:

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J. L. JACKSON.